

References

- AGHILI, F. and HAGHPANAHI, M. (1995) Use of Pattern Recognition Techniques to Control a Multifunctional Prosthesis, Medical & Biological Engineering and Computing, 33, 504-508.
- AGHILI, F. and MEGHDARI, A. (1995) Mechanical Design of a Modular Arm Prosthesis, International Journal of Robotics and Automation, 10, (1), 22-28.
- ARCHER, B. (1995) The Nature of Research, Co-Design, 2, 6-13.
- AMIS, A. A. (1990) Biomechanics of the Upper Limb: Forearm, Wrist and Fingers, Current Orthopaedics, 4, 107-111.
- ARMSTRONG, T.J. and CHAFFIN, D.B. (1978) An Investigation of the Relationship Between Displacements of the Finger and Wrist Joints and the Extrinsic Finger Flexor Tendons, Journal of Biomechanics, 11, 119-128.
- BAER, D.C. and SELIKTAR, R. (1987) Arm Prosthesis for Above Elbow Amputees Based on Extended Physiological Proprioception, IEEE/Ninth Annual Conference of the Engineering in Medicine and Biology Society, 13-16 (November), 1066-1068.
- BAR-COHEN, Y. Private Communication
- BANERJEE, N.S. (1982) Rehabilitation Management of Amputees. Williams and Wilkins, Baltimore. 99-149.
- BARCSAY, J. (1986) Anatomy for the Artist, Macdonald & Co. Ltd, London. (illustration no. III).
- BARKER, T.M., BARKER, A.C., KELLY, I.G. and PAUL, J.P. (1996) Three-Dimensional Joint Co-Ordination Strategies of the Upper-Limb During Functional Activities, Proceedings of the Institute of Mechanical Engineers - Part H: Journal of Engineering in Medicine, 210, 17-26.
- BARSBY, P., HAM, R., LUMLEY, C. and ROBERTS, C. (1995) Amputations and Prosthetics: A Handbook. King's College School of Medicine and Dentistry, London.
- BASALLA, G. (1988) The Evolution of Technology. Cambridge University Press. 14-21
- BAUGHMAN, R.H. (1996) Conducting Polymer Artificial Muscles, Synthetic Metals, 78, 339-353
- BAUGHMAN, R.H., SHACKLETTE, L.W., ELSERBAUMER, R.L., PLICHTA, E. and BECHT, C. (1990) Conducting Polymer Electromechanical Actuators, 559-582 -in- BREDAS, J.L. and CHANCE, R.R. (eds) (1990) Conjugated Polymeric Materials: Opportunities in Electronics, Optoelectronics, and Molecular Electronics, Kluwer Academic Publishers, Netherlands
- BECKER, D.B. (1968) Artificial Hand Having a Body Constructed From Separate Molded Plastic Parts for Easier Replacement of Damaged Parts, US Patent No. 3,413,658.
- BERGER, R.A., CROWNINSHEILD R.D. and FLATT, A.E. (1982) The Three-Dimensional Rotation of the Carpal Bones, Clinical Orthopaedics and Related Research, (167), 303-310.
- BENNET WILSON, A. Jr. (1989) Limb Prosthetics 6th Edition. Demos, New York, 27.

- BERGMAN, K. ORNHOLMER, L., ZACKRISSON, K. and THYBERG, M. (1992) Functional Benefit of an Adaptive Myoelectric Prosthetic Hand Compared to a Conventional Myoelectric Hand, Prosthetics and Orthotics International, 16, 32-37.
- BETTS, R. (1998) Private Communication
- BIGGERS, K.B., JACOBSEN, S.C. and GERPHEIDE, G.E. (1986) Low Level Control of the Utah/M.I.T. Dextrous Hand, Proceedings of the IEEE International Conference on Robotics and Automation, 61-66.
- BING KANG, S. and IKEUCHI, K. (1997) Toward Automatic Robot Instruction from Perception-Mapping Human Grasps to Manipulator Grasps, IEEE Transactions on Robotics and Automation, 13, (1), 81-95.
- BIOMET Ltd (1990) The Next Generation in Elbow Replacement: The Kudo Elbow System, Promotional Brochure, Catalogue No. 165613 and 165621.
- BOHON, K. and KRAUSE, S. (1998) An Electrorheological Fluid and Siloxane Gel Based Electromechanical Actuator: Working Toward an Artificial Muscle, Journal of Polymer Science, Part B Polymer Physics, 36, (6), 1091-1094
- BOONE, D.A., HARLAN, J.S. and BURGESS, E.M. (1994) Automated Fabrication of Mobility Aids: Review of the AFMA Process and VA/Seattle ShapeMaker Software Design, Journal of Rehabilitation Research and Development, 31, (1), 42-49.
- BROCK, D., LEE, W., SEGALMAN, D. and WITKOWSKI, W. (1994) A Dynamic Model of a Linear Actuator Based on Polymer Hydrogel. Journal of Intelligent Materials, Systems and Structures, 5, (November), 764-771.
- BUCKLEY, M.A., YARDLEY, A., JOHNSON, G.R. and CARUS, D.A. (1996) Dynamics of the Upper-Limb During Performance of the Tasks of Everyday Living - A Review of the Current Knowledge Base, Proceedings of the Institute of Mechanical Engineers, 210, 241-247.
- BUCHOLZ, B., ARMSTRONG, T.J. and GOLDSTEIN, S.A. (1992) Anthropometric Data for Describing the Kinematics of the Human Hand, Ergonomics, 35, (3), 261-273.
- BURGER, H. and MARINCEK, C. (1994) Upper Limb Prosthetic Use in Slovenia, Prosthetics and Orthotics International, 18, 25-33.
- CHIARELLI, P. (2000) Private Communication
- CALDWELL, D.G. (1993) Natural and Artificial Muscle Elements as Robot Actuators, Mechatronics, 3, (3), 269-283.
- CALDWELL, D.G., ANDERSON, U., BOWLER, C.J. and WARDLE, A.J. (1995) A High Power / Weight Dexterous Manipulator Using 'Sensory Glove' Based Motion Control and Tactile Feedback, Transactions of the Institute of Mechanical Engineers, 17, (5), 234-241.
- CALDWELL, D.G., TAYLOR, P.M. (1990) Chemically Stimulated Pseudo-Muscular Activation, International Journal of Engineering Science, 28, (8), 797-808.
- CALDWELL, D.G., WARDLE, A., KOCAK, O. and GOODWIN, M. (1996) Telepresence Feedback and Input Systems for a Twin Armed Mobile Robot, IEEE Robotics and Automation Magazine, (September), 29-37

CURRAN, B. and HAMBREY, R. (1991) The Prosthetic Treatment of Upper-Limb Deficiency, Prosthetics and Orthotics International, 15, 82-87.

The Terminator. Directed by CAMERON, J. (1984), Orion Pictures

CHAO, Y.S., KAI-NAN, A., COONEY, W.P. and LINSCHIED, R.L. (1989) The Biomechanics of the Hand: A Basic Research Study. World Scientific, London. 163-178.

CHAO, E.Y. and MORREY, B.F. (1978) Three-Dimensional Rotation of the Elbow, Journal of Biomechanics, 11, 57-73.

CHAPRA, S.C. and CANALE, R.P. (1988) Numerical Methods for Engineers Second Edition. McGraw-Hill Book Company, New York, 10.

CLARK, G.L., SHAW-WILGIS, E.F., AIELLO, B., ELKHAUS, D. and VALDATTA-EDDINGTON, L. (1997) Hand Rehabilitation: A Practical Guide 2nd Edition. Churchill Livingstone, London.

CONE, R.O., SZABO, R., RESNICK, D., GELBERMAN, R., TALEISNIK, J. and GILULA, L.A. (1983) Computer Tomography of the Normal Radioulnar Joints, Investigative Radiology, 8, (6), 541-545.

CONRAD, L.I. (1995) The Western Medical Tradition 800 to 1800 AD. Cambridge University Press, Cambridge, 264-265.

COONEY, W.P., LUCCA, M.J., CHAO, E.Y.S. and LINSCHIED, R.L. (1981) The Kinesiology of the Thumb Trapeziometacarpal Joint, The Journal of Bone and Joint Surgery, 63A, (9), 1371-1381.

CRONEY, J. (1980) Anthropometry for Designers, Batsford, London.

CROSSLEY, F.R.E. and UMHOLTZ, F.G. (1977) Design for A Three Fingered Hand, Mechanism and Machine Theory, 12, 85-93.

DALSEY, R.D., GOMEZ, W., SIETZ, W., DICK, H.M., HUTNICK, G. and AKDENIZ, R. (1989) Myoelectric Prosthetic Replacement in the Upper-Extremity Amputee, Orthopaedic Review, XVIII, (6), 697-702.

DANIELS AND WORTHINGHAM (1986) Muscle Testing: Techniques of Manual Examination 5th Edition. W.B. Saunders and Company, London

DATTA, D. and BRAIN, N.D. (1992) Clinical Applications of Myoelectrically Controlled Prostheses, Critical Reviews in Physical and Rehabilitation Medicine, 4, (3), 215-239.

DATTA, D. and IBBOTSON, V. (1998) Powered Prosthetic Hands in the Very Young, Prosthetics and Orthotics International, 22, 150-154.

DELAHEY, L., KRISHNAN, R.V., TAS, H. and WARLIMONT, H. (1974) Review: Thermoelasticity, Pseudoelasticity and the Memory effects associated with Martensitic Transformations, Journal of Materials Science, 9, 1521-1535.

DELLA SANTA, A., DE ROSSI, D. and MAZZOLDI, A. (1997) Characterization and Modelling of a Conducting Polymer Muscle-Like Linear Actuator, Journal of Smart Materials and Structures, 6, 23-34.

DeROSSI, D., SUZUKI, M., OSADA, Y. and MORASSO, P. (1992) Pseudomuscular Gel Actuators for Advanced Robotics, Journal of Intelligent Materials, Systems and Structures, 3, (January), 75-95.

DISNEY, W. (1933) Discussion of Animation Techniques Using Live Action Film as the Source postscript to Snow White and the Seven Dwarfs

DOUBLER, J.A. and CHILDRESS, D.S. (1984) An Analysis of Extended Physiological Proprioception as a Prosthesis-Control Method, Journal of Rehabilitation Research and Development, 21, (1), 5-18.

ENGERSTROM, B. and VAN DER VEN, C. (1999) Therapy for Amputees. Churchill Livingstone, London.

FOX, S.I. (1993) Human Physiology, Fourth Edition. Wm. C. Brown Publishers, Oxford, 197-201.

FRASER, C.M. (1998) AN Evaluation of the Use Made of Cosmetic and Functional Prostheses by Unilateral Upper-Limb Amputees, Prosthetics and Orthotics International, 22, 216-223.

FREY, D.D. and CARLSON, L.E. (1994) A Body Powered Prehensor With Variable Mechanical Advantage, Prosthetics and Orthotics International, 18, 118-123.

GALER, I.A.R. (1987) Applied Ergonomics Handbook, Butterworth, London.

GIBBONS, D.T., O'RIAIN, M.D. and PHILIPPE-AUGUSTE, S. (1987) An Above-Elbow Prosthesis Employing Programmed Linkages, IEEE Transactions on Biomedical Engineering, BME. 34, (7), 493-498.

GIBBS-SMITH, C. (1978) The Inventions Of Leonardo Da Vinci. Phaidon press, Oxford, 12-23.

GOMBRICH, E.H. (1989) Leonardo Da Vinci. Yale University Press in association with the South Bank Centre, New Haven & London, p116.

GORDON, J.E. (1978) Structures: Or Why Things Don't Fall Down. Penguin, London, 311-313.

GOW, D. (2000) Private Communication

GOW, D., CAMPBELL, G.S. and HOOPER, G. (1993) Low Cost Cosmetic Hand Prostheses, Journal of Hand Surgery - British and European Volume, 17B, (2), 201-203.

GRAUPE, D., SALAHI, J. and KOHN, K. (1982) Multifunctional Prosthesis and Orthosis Control via Microcomputer Identification of Pattern Differences in Single-Site Myoelectric Signals, Journal of Biomedical Engineering, 4, 17-22.

GUYOT, J. (1990) Atlas of Human Limb Joints Second Edition, Springer-Verlag, London, 164.

HAGERT, C. (1981) Anatomical Aspects on the Design of Metacarpophalangeal Joint Implants, Recon Surg and Traumat, 18, 92-110.

HARBRES, P., KADEFORS, R., MAGNUSSON, Z. and PETTERSON, I. (1). (1974) The Control of Upper-Extremity Prostheses and Orthoses. Charles and Thomas, USA, 181-189.

HARBRES, P., KADEFORS, R., MAGNUSSON, Z. and PETTERSON, I. (2). (1974) The Control of Upper-Extremity Prostheses and Orthoses. Charles and Thomas, USA, 146-150.

HASLAM, T.P. and TOMPKINS, M.E. (1995) Computerised Electronic and Prosthesis Apparatus and Method, United States Patent Document No. 5,413,611.

HANNAFORD, B., WINTERS, J.M., CHOU, C-P. and MARBOT, P-H. (1995) The Anthroform Biorobotic Arm: A System for the Study of Spinal Circuits, Annals of Biomedical Engineering, 23, 399-408.

Discussion of Natural Movement. Design and Technology: Special Effects
HENNEQUIN, N. (1990), Thames Television / Channel 4, 11 October.

HERDER, J.L., COOL, J.C. and PLETTENBURG, D. H. (1998) Methods for Reducing Energy Dissipation in Cosmetic Gloves, Journal of Rehabilitation Research and Development, 35, (2), 201-209.

HERZINGER, G. (1996) Mechatronics for a New Robot Generation, IEEE/ASME Transactions on Mechatronics, 1, (2), 149-157.

HOWMEDICA (1990) Souter Strathclyde Elbow Arthroplasty: Surgical Technique, Promotional Brochure, HIL 1580/390 E

HUDGINS, B., PARKER, P. and SCOTT, R. (1993) A New Strategy for Multifunctional Control Myoelectrical Control, IEEE Transactions on Biomedical Engineering, 40, (1), 82-91.

IBBOTSON, V. (1999) Private Communication with Ms. V. Ibbotson Senior Occupation Therapist at the Mobility and Specialised Rehabilitation Centre, Northern General Hospital, Sheffield.

IOVINE, J. (1997) Robots, Androids and Animatronics. McGraw-Hill, New York.

JACOBSEN, S.C., KNUTTI, D.F., JOHNSON, R.T. and SEARS, .H.H. (1982) Development of the Utah Arm, IEEE Transactions on Biomedical Engineering, BME-29, (4), 249-269.

JACOBSEN, S.C., WOOD, J.E., KNUTTI, J.F. and BIGGERS, K.B. (1984) The Utah MIT Dextrous Hand: Work in Progress, International Journal of Robotics Research, 3, (4), Winter, 21-48.

Equinox: The Cyborg Cometh directed by JOHNSTONE, G. (1994), Channel 4, 11 September (broadcast video).

JONES, L.E. and DAVIDSON, J.H. (1999) Save that Arm: a study of problems in the remaining arm of unilateral upper-limb amputees, Prosthetics and Orthotics International, 23, 55-58.

KABEI, N., YOSIZAWA, H., BANDO, K., MURAYAMA, T., NAGATAKE, K., SAITO, S. and TSUCHIYA, K. (1995) An Electrostatic Linear Actuator Developed as a Biomimicking Skeletal Muscle, Transactions of the Japan Society of Mechanical Engineers, 61, (586), June, 287-292.

KANETO, K., KANETO, M., MIN, Y. and MACDIARMID, A.G. (1995) Artificial Muscle - Electromechanical Actuators Using Polyaniline Films, Synthetic Metals, 71, 2211-2212.

KAPANDJI, I.A. (1982) The Physiology of the Joints Volume 1 The Upper-Limb. Churchill Livingstone, London.

KAPIT, W. and ELSON, L.M. (1993) The Anatomy Colouring Book 2nd Edition. Harper Collins Publishers, New York.

- KAPLAN, E.B. (1965) Kaplan's Functional and Surgical Anatomy of the Hand 2nd Edition. Pitman, London.
- KATO, I. And SADAMOTO, K. (1982) Mechanical Hands Illustrated. Springer-Verlag, Berlin.
- KEJLAA, G.H. (1993) Consumer Concerns and the Functional Value of Prostheses to Upper-Limb Amputees, Prosthetics and Orthotics International, 17, 157-163.
- KINNIER, A.B. (1965) Hendon Pneumatic Power Units and Controls for Prostheses and Splints, Journal of Bone and Joint Surgery, 47B, (3), 435-441.
- KLEIN-VOGELBACH, S. (1990) Functional Kinetics: Observing, Analysing and Teaching Human Movement 4th Edition, Springer-Verlag, London.
- KNUDSON, D.V. and MORRISON, C.S.(1997) Qualitative Analysis of Human Movement. Human Kinetics, Illinois.
- KOSTUIK, J.P. (1980) Amputation Surgery and Rehabilitation (The Toronto Experience). Church Hill Livingstone, New York.
- KREUGER, R.A. and PATTOM, M. (1988) Focus Groups a Practical Guide For Applied Research. Sage Publications.
- KURIBAYASHI, K., SHIMIZU, S., KAWACHI, A. and TANIGUCHI, T. (1994) Discrimination System Using Neural Network For SMA Prosthesis, IEEE International Conference on Intelligent Robots and Systems, 1832-1839.
- KYBERD, P. Algorithmic Control of a Multifunctional Hand Prosthesis . PhD Thesis, University of Southampton, 1990.
- KYBERD, P.J. and CHAPPELL, P.H. (1994) The Southampton Hand: An Intelligent Myoelectric Prosthesis, Journal of Rehabilitation Research and Development, 31, (4), 326-334.
- LAITHWAITE, E.R. (1980) Engineer Through the Looking Glass, British Broadcasting Association, London, 46.
- LAMB, D.W., HOOPER, G., and KUCZYNSKI, K. (1989) The Practice of Hand Surgery 2nd Edition. Blackwell Scientific Publications, Oxford, 394.
- LANDSMEER, J.F. (1976) Atlas of the Anatomy of the Human Hand. Churchill Livingstone.
- LAWRENCE, A., DE ROSSI, D., BAUGHMAN, R. (1993) Application of Conducting Polymers in Medical Robotics and Prosthetics, IEEE Proceedings of the Annual Conference on Engineering in Medicine and Biology, 15, (2), 956-957.
- LEE, A. and MATHES, D. (1999) Hand Transplantation: Pertinent Data and Future Outlook. The Journal of Hand Surgery, 24A, (5), 906-913
- LEOW, E.L., PEREIRA, B.P., KOUR, A.K. and PHO, R.W.H. (1997) Lifelikeness in Multilayered Digital Prostheses, Prosthetics and Orthotics International, 21, 40-51.

- LEWIS, C.T. and SHORT, C.S. (1962) A Latin Dictionary. Clarendon Press, Oxford.
- LIN, L-R. and HUANG, H-P. (1996) Integrating Fuzzy Control of the Dexterous National Taiwan University, IEEE/ASME Transactions on Mechatronics, 1, (3), 216-229.
- LIU, H., BUTTERFASS, J., KNOCH, S., MEUSEL, P. and HIRZINGER, G. (1999) A New Control Strategy for DLR's Multisensory Articulated Hand, IEEE Control Systems Magazine, 19, (2), 47-54.
- LIVERSLEY, K.R. (1983) Finite Elements: An Introduction for Engineers, Cambridge University Press. Cambridge.
- MARQUARDT, E. (1965) The Heidelberg Pneumatic Arm Prosthesis, Journal of Bone and Joint Surgery, 47B, (3), 425-434.
- MARTIN, R. (2000) Private Communication R. Martin Prosthetist at The Northern General Hospital Centre of Mobility and Specialised Rehabilitation, Sheffield.
- MASON, M. and SALISBURY, K. (1985) Robot Hands and the Mechanics of Manipulation. MIT Press, Cambridge Massachusetts.
- MCCURDIE, I., HANSPAL, R., and NIEVEEN, R. (1997) ICEROSS - A Consensus View: A Questionnaire Survey of the Use of ICEROSS in the United Kingdom, Prosthetics and Orthotics International, 21, 124-128.
- MCGREW, R.E. (1985) Encyclopaedia of Medical History. MacMillan Reference Books, London, 64.
- McMINN, R.M.H. (1993) A Colour Atlas of Human Anatomy 3rd Edition. Wolfe, London.
- NAKAMURA, T. *et al* (1994) A Biomechanical Analysis of Pronation-Supination of the Forearm Using Magnetic Resonance Imaging: Dynamic Changes of the Forearm During Pronation-Supination, Journal of the Japanese Orthopaedic Association, 68, 14-25.
- NASDAB (1999) Amputee Statistical Database for the United Kingdom, Common Services Agency, Edinburgh.
- NORKIN, C.C. and LEVANGIE, L. (1992) Joint Structure and Function: A Comprehensive Analysis 2nd Edition. F.A. Davis Company, Philadelphia.
- NORKIN, C.C. and WHITE, J. (1995) A Guide to Goniometry 2nd Edition. F.A. Davis Company, Philadelphia.
- NORMAN, D. (1999) The invisible computer, Cambridge, Mass.: The MIT Press, 192.
- NORMAN, D. (1988) The Design of Everyday Things, DoubleDay, London.
- OKADA, T. (1979) Object-Handling System for Manual Industry, IEEE Transactions on Systems, Man and Cybernetics, SMC-9, (2), 79-89.
- OKADA, T. (1982) Computer Control of Multijointed Finger System for Precise Object-Handling, IEEE Transactions on Systems, Man and Cybernetics, SMC-12, (3), 289-299.

- OTERO, T.F. and SANSINENA, J.M. (1997) Bilayer Dimension and Movement in Artificial Muscles, Bioelectrochemistry and Bioenergetics, 42, 117-122.
- OTTO BOCK (2000) MYOBOCK - Arm Components, Otto Bock Othopedic Industry Catalogue.
- PAPALAMBROS and WILDE (1991) Principles of Optimal Design: Modelling and Computation, Cambridge University Press, Cambridge.
- PAPENAK, V. (1980) Design for the Real World: Human Ecology and Social Change 2nd Edition. Thames and Hudson, London.
- PAWSON, R. and TILLEY, N. (1997) Realistic Evaluation, Sage Publications, 83-114.
- PERLIN, K., DEMMEL, J.W., and WRIGHT, P. (1989) Simulation Software for the Utah/MIT Dextrous Hand, Robotics and Computer-Aided Manufacturing, 5, (4), 281-292.
- PEIFFER, F. (1996) Grasping With Hydraulic Fingers - An Example of Mechatronics, IEEE/ASME Transactions on Mechatronics, 1, (2), 158-167.
- PHEASANT, S. (1987) Ergonomics, Standards and Guidelines for Designers. BSI, London, 11.
- PHELAN, R.M. (1970) Fundamentals of Mechanical Design 3rd Edition, McGraw-Hill Company, London.
- PHILLIPS, C.A. (1988) Sensory Feedback Control of Upper- and Lower-Extremity Motor Prostheses, CRC Critical Reviews in Biomedical Engineering, 16, (2), 105-140.
- PIMENTEL, K. and TEIXEIRA, K. (1993) Virtual Reality Through the new Looking Glass. Intel/Windcrest, McGraw-Hill, USA.
- PITT, G. (1973) Techniques in Engineering Design, Butterworth and Company (Publishers), London
- PONS, J.L., CERES, R., PFIEFFER, F. (1999) Multifingered Dexterous Robotic Hand Design and Control: A Review, Robotica, 17, 661-674.
- PUGH, S. (1990) Total Design: Integrated Methods for Successful Product Engineering. Addison-Wesley Publishing Company, Wokingham UK.
- REICHARDT, O. (1978) Robots Fact Fiction and Prediction. Thames & Hudson, London.
- RENZETTI, C.M. and LEE, R.M. (1993) Researching Sensitive Topics, Sage Publications, 101-107.
- ROBERTSON, E. (1978) Rehabilitation of Arm Amputees and Limb Deficient Children, Baillere Tindall, London.
- ROSHEIM, M.E. (1997) In the Footsteps of Leonardo, IEEE Robotics and Automation Magazine, 4, (2), June, 12-14.
- RUST, C., WILSON, A.J., and WHITELEY, G.P. (1998) Using Practice Led Design Research to Develop an Articulated Mechanical Analogy of the Human Hand, Journal of Medical Engineering and Technology, 22, (5), 226-232.

- SHALEHPOOR, K., SHAHINPOOR, M. and MOJARRAD, M. (1996) Electrically Controllable Artificial PAN Muscles, Proceedings of the SPIE, 2716, 116-124.
- SAUTER, W.F. (1991) The Use of Electric Elbows in the Rehabilitation of Children With Upper-Limb Deficiencies, Prosthetics and Orthotics International, 15, 93-95.
- SCOTT, P.B. (1984) The Robotics Revolution. Basil Blackwell, Oxford
- SCOTT, R.N. (1990) Myoelectric Control Systems Research at the Bio-Engineering Institute, University of New Brunswick, Medical Progress Through Technology, 16, 5-10.
- Blade Runner (Directors Cut) directed by SCOTT, R. (1991), Warner Brother's Pictures
- SCOTT, R.N. and PARKER, P.A. (1988) Myoelectric Prostheses: State of the Art, Journal of Medical Engineering and Technology, 12, (4), 143-151.
- SCHILLING, R.J. (1990) Fundamentals of Robotics. Prentice-Hall International, Inc., London.
- SKAHEN, J.R. et al (1997) The Interosseous Membrane of the Forearm: Anatomy and Function, The Journal of Hand Surgery, 22A, (6), 981-985.
- SHERIDAN, T.B. and MANN, R.W. (1978) The Choice of Control System for People with Severe Motor Impairment, Human Factors, 20, (3), 321-338.
- SHINSEI KOGYO (1985) Shinsei Kogyo Company Reports 1-3.
- SILVERMAN, D. (1997) Qualitative Research: Theory, Method and Practice. Sage Publications, 183-217.
- SIMPSON, I. (1973) Drawing: Seeing and Observation. Reinhold, London, p13.
- SMITH, K.L., LAWRENCE-WEISS, E. and LEHMKUHL, D. (1996) Brunnstrom's Clinical Kinesiology, 5th Edition, F. A. Davis Company, Philidelphia..
- SMELA, E., INGANAS, O. and LUNDSTROM, I. (1995) Controlled Folding of Micrometer-Size Structures, Science, 268, (23 June), 1735-1740.
- SNAITH, C.H. An Engineering Analysis of an Advanced Anatomically Analogous Upper-limb Prosthesis. Beng(Hons) Computer Aided Engineering and Design, Sheffield Hallam University, 1999.
- SPEETER, H.S. (1992) Transforming Human Hand Motion for Telem Manipulation, Presence, 1, (1), Winter, 63-79.
- STANGROOM, J. (1999) Private Communication with Dr. J. Stangroom Director of Electrorheological Fluid Developments. Hope, Derbyshire
- STANLEY, D. and KAY, N.R.M. (eds.) (1998) Surgery of the Elbow: Practical and Scientific Aspects, Arnold, London.
- STEADMAN, P. (1979) The Evolution of Designs (Biological Analogy in Architecture and the Applied Arts). Cambridge University Press, Cambridge.
- SULZERMEDICA (1991) AlloPro Product Information GSB Elbow Prostheses, Promotion Brochure, No. 1125- Ed. 03/91

- TANAKA, Y. and TSUBOE, H. (1994) The Development of ERF-Actuator for Driving Artificial Muscle, Transactions of the Japan Society of Mechanical Engineers, 60, (579), November, 3882-3887.
- THRING, M.W. and LAITHWAITE, E.R. (1977) How to Invent. The Macmillan Press Ltd. 69.
- TOSHIHIRO, H., HIROSHI, N., MITSUHIRO, H. and SADAIO, H. (1994) Electrostriction of a Highly Swollen Polymer Gel: Possible Application for Gel Actuator, Journal of Applied Polymer Science, 53, 79-84.
- TURA, A., LAMBERTI, C., DAVALLI, A. and SACCHETTI, R. (1998) Experimental Development of a Sensory Control System for an Upper-Limb Myoelectric Prosthesis with Cosmetic Covering, Journal of Rehabilitation Research and Development, 35, (1), 14-26.
- UCHINO, K. (1986) Electrostrictive Actuators: Materials and Applications, American Ceramic Society Bulletin, 65, 647-652.
- VENKATARAMAN, S. and IBERALL, T. (1990) Dexterous Robotic Hands, Springer-Verlag, New York.
- RoboCop directed by VERHOEVEN, P. (1987), Orion Pictures
- VITALI, M., ROBINSON, K.P., ANDREWS, B.G. and HARRIS, E.E. (1978) Amputations and Prostheses, Baillere Tindall, London.
- WATSON, J. (2000) Interview with J. Watson, Maxillo Facial Department, Northern General Hospital, Sheffield, 14th July .
- WATT, A. (2000) 3D Computer Graphics 3rd Edition. Addison Wesley, London.
- WILLIAMS, N.W. A Study of the Normal and Reconstructed Rheumatoid Metacarpophalangeal Joint Utilising A Goniometric Glove. PhD Thesis, Medical Physics and Clinical Engineering. The University of Sheffield, 1998
- YOUM, Y., DRYER, R.F., THAMBYRAJAH, K., FLATT, A.E. and SPRAGUE, B.L. (1979) Biomechanical Analyses of Forearm Pronation-Supination and Elbow Flexion-Extension, Journal of Biomechanics, 12, 245-255.
- YOUM, Y. and FLATT, A.E. (1980) The Kinematics of the Wrist, Clinical Orthopaedics and Related Research, 149, (June), 21-32.
- YOUM, Y., GILLESPIE, T.E., FLATT, A.E., and SPRAGUE, B.L. (1978) Kinematic Investigation into the Normal MCP Joint, Journal of Biomechanics, 11, 109-118.
- ZIMMER (1990) Alivium Stanmore Total Elbow Replacement, Promotion Brochure, Booklet No. 181, London

Appendix i - Published outcomes

During the course of this research the work has been reported through both papers in refereed journals and presentations at international conferences:

RUST, C., WHITELEY, G.P., and WILSON, A.J.. (1997) The Development of Upper-Body Prostheses Directly Analogous to Real Limbs, Proceedings of the Medical and Biological Engineering and Computing Conference September 14-19 Nice, France, Vol. 35, Supplement pt. 1, p 655.
(appendix (i))

RUST, C., WILSON, A.J., and WHITELEY, G.P. (1998) Using Practice Led Design Research to Develop an Articulated Mechanical Analogy of the Human Hand, Journal of Medical Engineering and Technology, Vol. 22, No. 5, pp226-232.
(appendix (ii))

WHITELEY, G.P., WILSON, A.J., EROL, R. and RUST, C. (1999) Development of Elbow and Forearm Joints for an Anatomically Analogous Upper-Limb Prosthesis, Proceedings of the European Medical & Biological Engineering Conference EMBEC '99 November 4-7 Vienna, Austria, Pt. 2, pp1376-1377.
(appendix (iii))

Research groups in several countries have expressed an interest in applying the work described in this thesis to both prosthetics and to more fundamental work on actuation and control. Currently, a model limb has been supplied to the University of Pisa who are investigating appropriate actuation and control strategies. A further copy of the model has been requested by the Jet Propulsion Laboratory in Pasadena. Further dissemination of model arms to other international research groups is planned.

(Copies of the papers listed above were bound with the original copies of the thesis. Subsequently [2001] a model arm was supplied to the NASA Jet Propulsion Laboratory [Dr Yosi Bar-Cohen] where it is in use for evaluation and development of Electro-active Polymer [EAP] artificial muscles)